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10/574,368

01/16/2007

Olaf Gawer

2642.025

5847

23405

7590

10/02/2009

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EXAMINER

ROST, ANDREW J

ART UNIT

PAPER NUMBER

3753

MAIL DATE

DELIVERY MODE

10/02/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/574,368 | Applicant(s) GAWER ET AL. | |
| | Examiner Andrew J. Rost | Art Unit 3753 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/31/2006, 11/14/2008</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

1. The Information Disclosure Statement filed 11/14/2008 contains a duplicate reference (citation number 2 under U.S. Patents in reference to U.S. Patent No. 5,538,610) that was previously cited on 3/31/2006 (reference AA). Therefore, that reference was considered with respect to the filing of 3/31/2006.

Drawings

2. The drawings are taken to be the drawings submitted with the international document WO 2005/040452 A1.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 19 and 20. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata et al. (5,827,409) in view of Gebele et al. (5,228,838).

Regarding claim 1, Iwata et al. disclose a sluice system having a pre-vacuum sluice chamber (61) in which a pump system is connected which contains both mechanical pumps and turbo-molecular pumps (col. 4, lines 41-47). Iwata et al. do not expressly disclose the use of a first selectively activatable valve arrangement connected to the mechanical pumps and a second activatable valve arrangement connected to the turbo-molecular pumps. However, Gebele et al. teach the use of valves (19, 23) to be

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placed between various pumps (vacuum pump 9 and high vacuum pump 12) and the chamber (5) in which the pumps provide a vacuum in order to direct the vacuum flow through the various pumps (col. 3, lines 5-7). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the valves as taught by Gebele et al. between the mechanical pumps and turbo-molecular pumps and the pre-vacuum sluice chamber of Iwata et al. in order to direct the vacuum flow through the various pumps wherein the valve arrangement associated with the high vacuum pump (23 as taught by Gebele et al.) is activated (opened) when the valve arrangement associated with the other pump (vacuum pump 9) is deactivated (closed) (as taught by Gebele et al. in col. 4, lines 42-47 and illustrated in figure 4).

In regards to claim 4, Gebele et al. teach the connection of the high vacuum system (12) is selectively connectable (via a valve 14) to the vacuum system (9).

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata et al. (5,827,409) in view of Gebele et al. (5,228,838) further in view of Myneni (5,703,281) and further in view of Hiesinger (2,931,561).

In regards to claim 2, Iwata et al. in view of Gebele et al. disclose a sluice system having a pre-vacuum sluice chamber (61) in which a pump system is connected which contains both mechanical pumps and turbo-molecular pumps (col. 4, lines 41-47) wherein a plurality of selectively activatable valves are arranged between the pumps and the vacuum chamber. The modified Iwata et al. reference does not disclose a backing pump to be a rotary slide-valve pump. However, Myneni teaches the use of a

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rotary pump (12) to be used as a backing pump in order to provide a pumping down to 10^{-1} to 10^{-2} Torr (col. 3, lines 26-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the backing pump of the modified Iwata et al. reference as a rotary pump as taught by Myneni in order to provide a specific pump to pump the chamber down to 10^{-1} to 10^{-2} Torr. The modified Iwata et al. reference does not disclose the main mechanical pump to be a Roots pump. However, Hiesinger teaches the use of a Roots type mechanical pump (10) as a main pump in order to maintain a high compression ratio for the evacuating fluid (col. 2, lines 4-6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the main pump of the modified Iwata et al. reference as a Root's type mechanical pump as taught by Hiesinger in order to maintain a high compression ratio for the evacuating fluid.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata et al. (5,827,409) in view of Gebele et al. (5,228,838) further in view of Myneni (5,703,281).

In regards to claim 3, Iwata et al. in view of Gebele et al. disclose a sluice system having a pre-vacuum sluice chamber (61) in which a pump system is connected which contains both mechanical pumps and turbo-molecular pumps (col. 4, lines 41-47) wherein a plurality of selectively activatable valves are arranged between the pumps and the vacuum chamber. The modified Iwata et al. reference does not disclose a backing pump to be a rotary slide-valve pump. However, Myneni teaches the use of a

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rotary pump (12) to be used as a backing pump in order to provide a pumping down to 10^{-1} to 10^{-2} Torr (col. 3, lines 26-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the backing pump of the modified Iwata et al. reference as a rotary pump as taught by Myneni in order to provide a specific pump to pump the chamber down to a desired pressure.

9. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata et al. (5,827,409) in view of Gebele et al. (5,228,838) and further in view of Wenk (5,254,169).

Iwata et al. in view of Gebele et al. disclose a sluice system having a pre-vacuum sluice chamber (61) in which a pump system is connected which contains both mechanical pumps and turbo-molecular pumps (col. 4, lines 41-47) wherein a plurality of selectively activatable valves are arranged between the pumps and the vacuum chamber with the connection of the high vacuum system (12 in Gebele et al.) is selectively connectable (via a valve 14) to the vacuum system (9). The modified Iwata et al. reference does not disclose the pre-vacuum pump system is selectively connected to the prevacuum sluice chamber in a first state and operates as a backing pump arrangement to the high vacuum pump system in a second state wherein the high vacuum pump system has a support pump and the main pump of the pre-vacuum pump system being in parallel to the support pump. However, Wenk discloses a first pumping system (pumps 14, 15) with support pumps (mechanical pumps 17a, 18a) that are connected with a second pumping system (mechanical pumps 17, 18) through a valve

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(valve in the line as shown in figure 2) wherein the second pumping set is operable to pump the chamber (28) through a selectively activatable valve and pump (16a) or can be in fluid communication with the main pumps of the first pumping system (14, 15) wherein the second pumping system (17, 18) are located in parallel to the support pumps (17a, 18a) in order to provide diverse pumping of the chamber (28, shown in figure 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange and connect the high vacuum system to the pre-vacuum pump system through a bypass line with a valve and providing a support pump in communication with the high vacuum system in parallel to the main pump as taught by Wenk in order to provide diverse pumping of the chamber.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew J. Rost whose telephone number is 571-272-2711. The examiner can normally be reached on 7:00 - 4:30 M-Th and 7:00 - 12:00 Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. J. R./
Examiner, Art Unit 3753

/Robin O. Evans/
Supervisory Patent Examiner, Art Unit 3753